# INDEX

Abnormalities in mucous glands, in smokers vs. non- smokers, 97 in small airways, in smokers vs. non- smokers, 97, 98 Acrolein effect on respiratory tract, in rats, 104	Autopsy studies emphysema development and smoking, 9° mucous gland abnormalities and smoking 97 small airway abnormalities and smoking 97,98
Adipose tissue effect of nicotine, in rats, 13	
AHH activity	- ·
see Aryl hydrocarbon hydroxylase activity	Benzo(a)pyrene
Air pollution	and air pollution, in lung cancer develop-
and smoking, in COPD development,	ment, 45,46
82,83	role in respiratory tract carcinoginesis, in animals, 46,47
and smoking, in lung cancer development,	Bladder cancer
45,46 Airways, large	see Genitourinary cancer
effect of smoking one nonfilter cigarette,	Blood cholesterol
99	effect of smoking, 17,18
Airways, small	Blood coagulation
abnormalities, in smokers vs. nonsmokers,	effect of smoking, 18,19
autopsy studies, 97,98	Blood lipids levels
effect of smoking one nonfilter cigarette,	effect of smoking, 17
99	Blood pressure
Alcohol consumption	effect of CO exposure, 11,12
and smoking, in oral cancer etiology,	effect of nicotine, 13
53-55	effect of smoking, 17
Alveolar macrophages	Boston Collaborative Drug Surveillance Pro-
effect of cigarette smoke, 50	gram
Angina pectoris carbon monoxide exposure and, 11,12	role of coffee drinking and smoking in myocardial infarction, 8
coffee drinking, smoking, and, 8	Bronchial epithelium
smoking and, 8	changes after nitrogen dioxide exposure,
Antitrypsin deficiency	in animals, 102,103
and smoking, in COPD etiology, 87-90	effect of filtered gas-phase cigarette
Arteriosclerosis obliterans (ASO)	smoke, in rabbits, 104,105
see Vascular disease, peripheral	Bronchitis
Arthritis, rheumatoid	post-operative, incidence in smokers vs.
pulmonary function abnormalities, smok-	nonsmokers, 92
ing, and, 92,93	prevalence in cement and rubber industry
Aryl hydrocarbon hydroxylase activity	workers, smokers vs. nonsmokers, 95,96
role in lung cancer development, 49-52	prevalence in the elderly, smokers vs. non-
Asbestos exposure	smokers, 78,79 prevalence in male smokers by smoking
synergistic effect with smoking in lung	patterns, 79
cancer development, 41-43 Asbestosis	prevalence in rubber industry workers,
in smokers vs. nonsmokers, asbestos work-	smokers vs. nonsmokers, 96
ers in Singapore, 95	prevalence in urban vs. rural population in
Atherosclerosis, peripheral	Mongolia, 80
see Vascular disease, peripheral	prevalence in U.S., statistics, 75
Atherosclerotic brain infarction (ABI)	prevalence in wool and cotton textile
see Vascular disease, peripheral	workers in North Carolina, 93

and small airway abnormalities, in smokers disease, peripheral, Cerebrovascular vs. nonsmokers, 97,98 and smoking, effect on pulmonary funcrelationship of smoking to, 3-19 tion, 80 summary of previous findings, 3,4 summary of previous findings on relationsummary of recent findings, 19 ship to smoking, 75-78 Cardiovascular system Bronchopulmonary diseases, non-neoplastic effect of carbon monoxide exposure, 10-13 see also Bronchitis, Emphysema effect of nicotine, 13 air pollution and smoking in etiology of, Catecholamine levels effect of nicotine, in rats, 13 82.83 antitrypsin deficiency and smoking in eti-Cerebrovascular disease (CVD) ology of, 87-90 epidemiologic studies, 16,17 closing volume abnormalities, in smokers incidence in longshoremen, 17 vs. nonsmokers, 84-87 incidence in men, Framingham study, 17 history of respiratory diseases and smokincidence in women, smokers vs. noning in etiology of, 90 smokers, 16,17 incidence in autoworkers, 80 oral contraceptives and smoking in etioloccupational exposure and smoking, 80 ogy of, 16,17 prevalence in Boston policemen, smokers Cervical cancer vs. nonsmokers, 82,83 see Genitourinary cancer prevalence in the elderly, smokers vs. non-CHD smokers, 78 see Coronary heart disease prevalence in urban vs. rural population, in Cholesterol levels effect of smoking, 17 Mongolia, 80 reference listings, 107-118 Chronic bronchitis small airways disease, pulmonary function, see Bronchitis Chronic obstructive pulmonary diseases and, 84-87 small airways disease, smoking, and, 84-87 see Bronchopulmonary diseases, nonsummary of recent findings, 106, 107 neoplastic, Bronchitis, Emphysema **Bullous disease** Cigar smoking relationship to lung cancer, 39,40 incidence in men by age, race, and smoking habit, 90-92 Cigarettes filter vs. nonfilter, in reducing lung cancer Byssinosis dust exposure and smoking in etiology of, risk, 40,41 94-96 Cigarette consumption see Smoking Cigarette smoke see Smoke, cigarette Ciliary activity effect of nitrogen dioxide, in rats, 103 Cadmium in emphysema etiology, in animals, 104 effect of smoking, 101,102 Closing-volume abnormalities Cancer as indicator of small airways disease, in see also Specific site, e.g., Lung cancer summary of recent findings on relationsmokers vs. nonsmokers, 84-87 co ship to smoking, 58,59 Carbon monoxide see Carbon monoxide coronary heart disease and, 10-12 Coffee drinking effects on cardiovascular system, 10-12 angina pectoris, smoking, and, 8 from freeway traffic, effect on myocardial myocardial infarction, smoking, and, 8 work capacity and angina, 11 Contraceptives, oral incidence of stroke and, in women smo-Carboxyhemoglobin levels coronary heart disease and, 10-12,19 kers vs. nonsmokers, 16,17 COPD Carcinogenesis experimental, 46,47 see Bronchopulmonary diseases, nonmechanism of action, in lung cancer inducneoplastic tion, in animals, 46,47 Coronary Drug Project Research Group Carcinogens epidemiologic study of smoking and CHD, in cigarette smoke condensate, 47

Coronary heart diseases

farction

see also Angina pectoris, myocardial in-

Cardiovascular diseases

role in tumor induction in animals, 46,47

see also Coronary heart disease, Vascular

associated risk factors and smoking, 17 autopsy studies, 4 carbon monoxide and, 10-12 epidemiologic studies, 4 incidence in men under 60, in New South Wales, 6 incidence in men with and without ventricular premature beats, 4-6 incidence in middle-aged men from various countries, 6 incidence in a tribal population, New Guinea, 9 incidence in smokers vs. nonsmokers, Peoples Gas Co. Study, 6,7 incidence in smokers vs. nonsmokers, Stockholm Prospective Study, 6 incidence in women, smokers vs. nonsmokers, 9,10 nicotine and, 13 pathophysiology of, effect of carbon monoxide exposure, 10 summary of relationship to smoking, Cotton dust exposure see Dust exposure Cough effect of air pollution and smoking, 90.91 prevalence in cement and rubber industry workers, smokers vs. nonsmokers, 95,96 see Cerebrovascular disease, 16 Cytologic studies macrophage function and smoking, 104,105

# Dust exposure

and smoking as risk factors in bronchitis development, 93,94 and smoking, as risk factors in byssinosis development, 94-96

# Elderly

prevalence rates for COPD in smokers vs. nonsmokers, 78 Emphysema

antitrypsin deficiency and smoking in etiology of, 87-90

cadmium exposure in etiology of, in animals, 104 premature development and smoking,

autopsy studies, 97 prevalence rates in U.S., 75

pulmonary function studies and, 80

summary of previous findings on relationship to smoking, 75-78

**Enzymes** 

effect of cigarette smoke, in rabbit lungs,

and macrophage function, in rabbit lungs, 104,105

Epidemiological studies

COPD and smoking, 78-80 lung cancer and smoking, 37

oral cancer and smoking, 53

pancreatic cancer and smoking, 57

Esophageal cancer

summary of previous findings on relationship to smoking, 55

Exercise performance

effect of carbon monoxide exposure, 11,12

and pulmonary function, smokers vs. nonsmokers, 99

# Filters

as a factor in reducing lung cancer risk, 40,41

Framingham Study

epidemiologic study of CHD, CVD, intermittent claudication, and smoking, 14-16

Free fatty acids (plasma) effect of nicotine, in rats, 13

### Gastric cancer

mortality rates in Japanese smokers vs. nonsmokers, 56.57

tea drinking and smoking in etiology of, 56.57

summary of previous findings on relationship to smoking, 55

# Genetics

role of antitrypsin deficiency and smoking in COPD development, 87-90

and smoking, role in lung cancer development, 37

# Genitourinary cancer

cigarette smoke condensate as cause, in animals, 58

excretion of tryptophan in smokers vs. nonsmokers with, 58

incidence in smokers vs. nonsmokers, 58 summary of previous findings on relationship to smoking, 57

effect of CO exposure, 11,12 effect of nicotine, 13

Heart work capacity
effect of CO exposure, 10-12
effect of nicotine, 13
Histological studies
lung cancer and smoking, 38
macrophage function and, 104,105
Hypercholesterolemia
incidence in Belgium military men, 17,18
Hypertension
incidence in male Israeli civil servants, 18

Immune system
response to benzo(a)pyrene-induced lung
tumors, 48,49
Intermittent claudication
smoking as a major risk factor, 14-16

Laryngeal cancer summary of previous findings on relationship to smoking, 57 Lung cancer asbestos exposure and smoking as risk factors, 41-43 epidemiologic studies, 37,38 experimental studies, 43-52 genetics and smoking as risk factors, 37 histopathologic studies in smokers vs. nonsmokers, 38,39 immunologic response to benzo(a)pyreneinduced tumor, in animals, 48,49 incidence in cigar and/or pipe smokers vs. nonsmokers, 39,40 incidence in smokers vs. nonsmokers, in India, 37,38 incidence in women smokers vs. nonsmokers, 39,40 mortality rates from lung cancer for men, particle deposition in bronchi and site of, 44,45 Philadelphia Pulmonary Neoplasm Research Project histopathologic study, 38 risk reduction with filter vs. nonfilter cigarettes, 40,41 role of aryl hydrocarbon hydroxylase activity and polyaromatic hydrocarbons in development of, 49-52 role of pulmonary infections and smoking in etiology of, 47,48 sex ratio statistic, 40 Xenon-133 washout technique for detection of, 43,44 summary of previous findings on relationship to smoking, 35-37 Lung function see Pulmonary function

and cardiovascular disease, in women smokers vs. nomsmokers, 10,19 Mitochondria effect of tobacco smoke, in rat liver, 104 Mortality from CHD, age as a factor, 6 from CHD, in middle-aged men in seven countries, 6 from CHD, in smokers vs. nonsmokers, 3-6 from CHD, in survivors of myocardial infarction, smokers vs. nonsmokers, 4-6 Mucociliary transport effect of smoking, 101,102 Mucous gland abnormalities, in smokers vs. nonsmokers. Myocardial infarction coffee drinking, smoking and, 8 incidence in men with and without ventricular premature beats, 4,5 incidence in pre- vs. postmenopausal woprevalence in current vs. ex-smokers, 8 recurrency in smokers vs. nonsmokers, in Buenos Aires, 9 and smoking in India, 8

Menopause

**Nicotine** coronary heart disease and, 13,19 effect on adipose tissue, in rats, 13 effect on peritoneal macrophages, in mice, 105 effect on pinocytosis, in mouse peritoneal macrophages, 105 effect on respiratory tract in rats, 104 Nitrogen dioxide effect on AHH activity, 52 effect on bactericidal activity, in mouse lung, 103 effect on lung physiology, in monkeys, 103 effect on pulmonary physiology, in animals, 102-103 **Nitrosamines** role in respiratory tract carcinogenesis, in animals, 47

Occupational diseases asbestosis, in asbestos workers, in Singapore, 95 bronchitis, in cement and rubber industry workers, 95,96 bronchitis and respiratory tract irritation, in rubber industry workers, 96 bronchitis, in wool and cotton textile workers, 93,94

byssinosis, in cotton and wool textile workers, 93,94 COPD, in auto workers, 80 smoking and, 93-96

Occupational hazards

air pollution exposure in Boston policemen, 82,83

asbestos exposure and smoking as factors in lung cancer development, 41-43 rubber industry fumes and smoking, 96 textile dust exposure and smoking, 93-96

Oral cancer

alcohol consumption and smoking in etiology of, 53-55

epidemiologic studies, 53-55

summary of previous findings on relationship to smoking, 52,53

Pancreatic cancer

incidence in cigar/pipe and cigarette smokers vs. nonsmokers, 55,56

relative risk in men by number of cigarettes smoked, 55

summary of previous findings on relationship to smoking, 55

Particulate matter

and lung cancer development, 44,45

Peoples Gas Company Study

epidemiologic study of smoking and CHD, 6,7

Peritoneal macrophages

effect of nicotine, in mice, 105

Peripheral vascular disease

see Vascular disease, peripheral

Philadelphia Pulmonary Neoplasm Research Project

lung cancer histopathologic studies and, 38

Pinocytosis

effect of nicotine, in mouse peritoneal macrophages, 105

Pipe smoking

relationship to lung cancer, 39,40

Polyaromatic hydrocarbons

role in lung cancer development, 49-52

Postoperative complications

incidence in bronchitic and nonbronchitic smokers vs. nonsmokers, 92

Pulmonary bactericidal activity

effect of nitrogen dioxide, in mouse lungs, 103

Pulmonary clearance

effect of nitrogen dioxide, in rats, 103 effect of smoking, 101,102

in smokers, ex-smokers, and nonsmokers with and without pulmonary disease, 100,101

Pulmonary function

abnormalities, and rheumatoid arthritis in

smokers vs. nonsmokers, 92,93

of Boston policemen, smokers vs. nonsmokers, 82,83

before and after smoking one non-filter cigarette, 99

effect of cigarette smoke, in monkeys, 102 effect of dust exposure and smoking, 95 effect of exercise performance and smoking, 99

effect of isoproterenol in smokers, nonsmokers and bronchitics, 99,100

effect of nitrogen dioxide, in animals, 102,103

effects of smoking, in healthy populations, 80.81

effects of smoking, in patients with COPD,

of insurance company employees, smokers vs. nonsmokers, 80,81

of male executives, smokers vs. nonsmokers, 81

of male and female smokers, in New Guinea, 81,82

of pipe and cigarette smokers, ex-smokers, and nonsmokers, 99

small airways disease, smoking, and, 84-87 of smokers vs. nonsmokers, 80-82

Pulmonary infections

and smoking, role in lung cancer development, 47,48

Pulmonary macrophages

effect of cigarette smoke, in rabbits, 104.105

effect of cigarette smoke extract, in sheep lungs, 105

Pulmonary physiology

new animal model for testing of, 102

Renal cancer

see Genitourinary cancer

Respiratory symptoms

see also Cough

Respiratory symptoms

effect of air pollution and smoking, 90,91 prevalence in cement and rubber industry workers, smokers vs. nonsmokers, 95,96

Respiratory tract

carcinogenesis induction in animals, 46,47 irritation, prevalence in rubber industry workers, smokers vs. nonsmokers, 96

Seven Countries Study

epidemiologic study of smoking and CHD,

Sex ratio

in mortality rates from lung cancer, 40,46

Small airways disease see Airways, small complications following, in smokers vs. Smoke, cigarette nonsmokers, 92 effect on lung AHH-activity, 50,51 effect on pulmonary macrophage function, in rabbits, 104 effect on pulmonary physiology, in animals, 102 Tecumseh Study effect on respiratory tract, in rats, 104 lung function differences in smokers and extract, effect on pulmonary macrononsmokers, 81 phages, in sheep lungs, 105 Thromboangiitis obliterans (TAO) Smoke condensate, cigarette see Vascular diseases, peripheral as cause of bladder tumors, in rats, 58 **Thrombosis** role in respiratory tract carcinogenesis, in smoking and, 18,19 animals, 47 Traffic Smoke, tobacco effect on air pollution in Boston, 82,83 effect on mitochondrial function, in rat liver, 104 Smoking and air pollution, effect on pulmonary Urinary bladder cancer function and COPD prevalence, 82,83 see Genitourinary cancer and asbestos exposure, as factors in lung Uterine cancer cancer development, 41-43 see Genitourinary cancer association with other risk factors in CHD, 6,7,17 bronchitis prevalence rates and, 79 and CHD, age as a factor, 6 Vascular disease, peripheral and CHD, in women, 9,10 see also Intermittent claudication and coffee drinking, in myocardial infarcepidemiologic studies, 14-16 tion etiology, 8 experimental studies, 16 effect on platelet function, 18,19 smoking in etiology of, 14-16 as the major risk factor in intermittent claudication, 14-16 as a major risk factor in peripheral vascular Women disease, 14-16 trends for U.S. men, for years 1955, 1966, CHD incidence in, 9,10 lung cancer incidence in, 39,40 and 1970, 40 vasoconstrictive effects in normal subjects, mortality rates, in smokers vs. non-16 smokers, 9,10 mortality rates from lung cancer and Smoking characteristics bronchitis prevalence rates in men and, 79 asbestos exposure, 42,43 COPD prevalence rates in Yugoslavia and, mortality rates from lung cancer, statistical sex ratio, 40,45 Stockholm Prospective Study myocardial infarction in pre- vs. postepidemiologic study of smoking and CHD, menopausal, 10 secular trends of lung cancer development Stomach cancer in, 40 see Gastric cancer sudden death rates in, 9,10 Stroke trends in cancer incidence rates for selecsee Cerebrovascular disease ted sites in, 41,42 Sudden death incidence in men with and without ventricular premature beats, 5 incidence in women, smokers vs. non-Xenon-133 smokers, 9,19 washout technique for detection of lung smoking as a risk factor, 4-6,19 cancer, 43,44

DHEW Publication No. (CDC) 74-8704